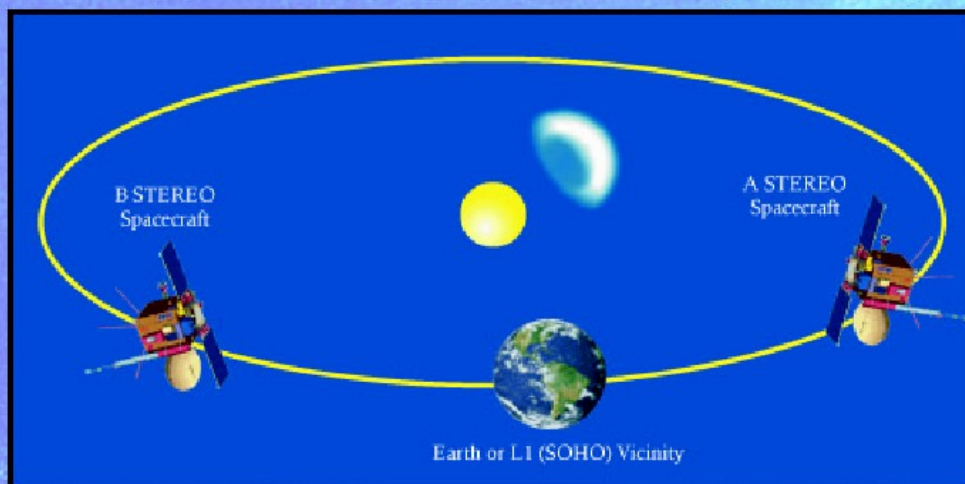


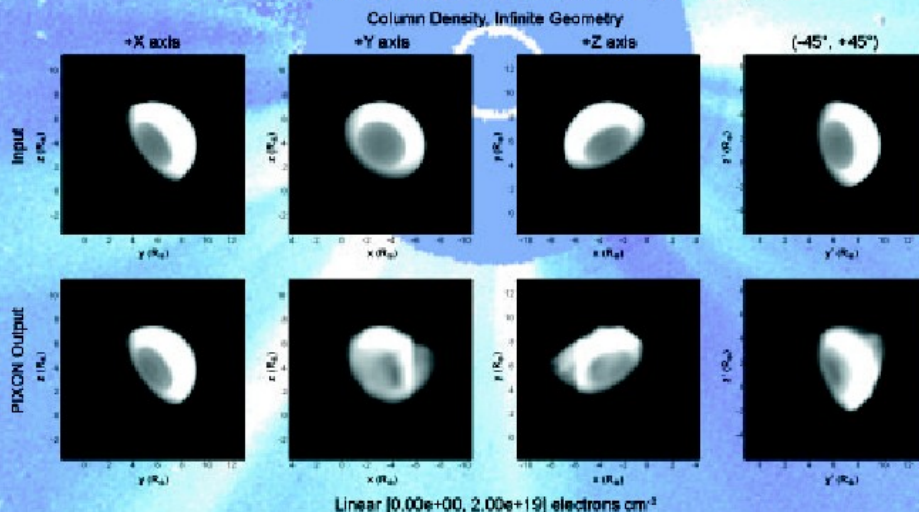
# WHITE LIGHT CORONAGRAPH 3D RECONSTRUCTION FROM SECCHI

John Cook, Jeff Newmark,  
Paul Reiser (Naval Research Laboratory),  
and Amos Yahil (Pixon LLC)

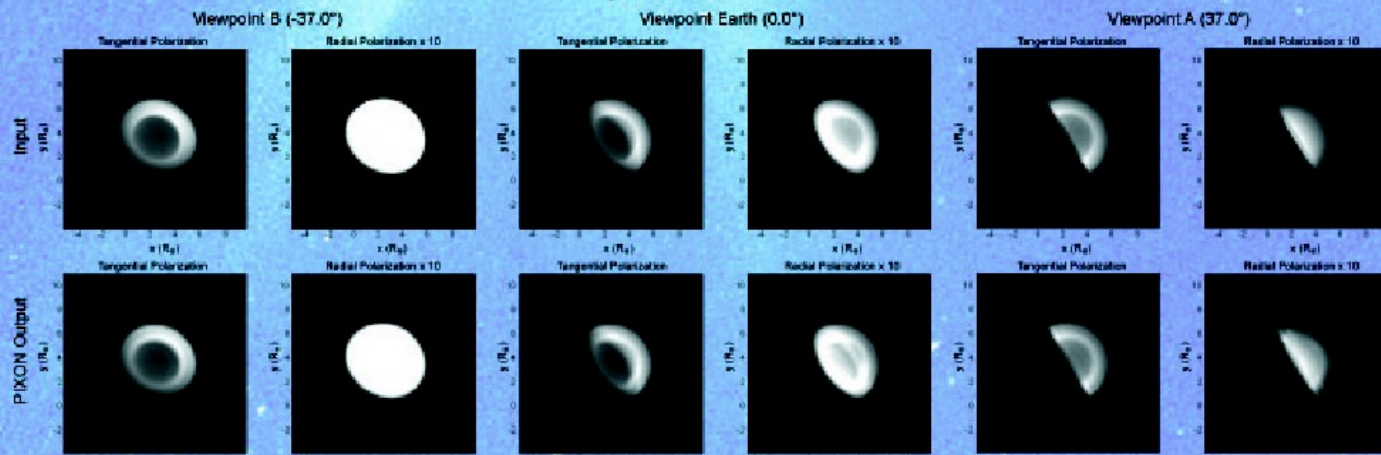
Constant Density Half Shell CME Model Observed from Three Viewpoints in the Ecliptic Plane



3D Electron Density Visualized from Principal Viewpoints



Synthetic CCD Pictures



# LWS Proposal

## 3D Reconstruction of White Light Coronagraph Images from Multiple Viewpoints

PI John Cook, Co-I's Jeffrey Newmark, Paulett Liewer, Collaborators Paul Reiser, Amos Yahil

Example of the 3D electron density reconstruction of a constant density half shell observed from three viewpoints in the ecliptic plane, using the PIXON reconstruction algorithm employed in our proposal

- Top: Schematic of hemispherical shell (model CME) ejected from Sun, viewed by SECCHI coronagraphs on Ahead (A) and Behind (B) twin STEREO spacecraft, and by LASCO on SOHO
- Middle: Visualization of the input model half shell (top row) and the reconstructed object (bottom row), from x, y, z, and  $(-45^\circ, +45^\circ)$  directions
- Bottom: Synthetic white light CCD pictures, in radial and tangential polarizations, from the three viewpoints of B, Earth (LASCO on SOHO), and A coronagraphs. Original input CCD pictures (top row), and CCD pictures